

**NEIGHBORHOOD PARK ON MCCRIMMON PARKWAY  
MASTER PLAN REPORT**

TOWN OF CARY

**APPROVAL DATE**

**June 27, 2019**

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## EXECUTIVE SUMMARY

### Project Introduction:

This 20-acre park site located at the southeast corner of Green Level Church Road and McCrimmon Parkway features rolling topography, attractive woodlands and two small creeks. It is bounded by roads on three sides and is surrounded by multi-family developments and nearby 55+ communities, as well as single family residential neighborhoods. The park is designated as a Neighborhood Park in the Town's Parks, Recreation and Cultural Resources Facilities Master Plan within the Cary Community Plan, intended to provide passive and active recreation facilities that serve the everyday needs of the surrounding neighborhoods while also contributing to the recreational resources of the town as a whole. Morris Branch Greenway will extend through the park, connecting to the existing trail system west of Green Level Church Road via the existing pedestrian underpass. Eastward this plan proposes a modified route for Morris Branch Greenway to follow Morris Branch to I-540.

### Overall park character:

The site's natural features offer opportunities for distinctive and attractive park character and interaction with nature, as well as challenges for site development due to topography, extensive stream buffers, and woods worth saving. Morris Branch runs along the south boundary with a tributary extending through the park's center. The rolling topography offers opportunities for elevated views of the wooded stream valleys. The woods are primarily mixed hardwoods, with stands of large trees scattered throughout the site.

### Public Involvement:

The Park Master Planning process ran from Fall 2017 to Spring 2019. The planning process was comprehensive and inclusive, integrating wider town goals, including stormwater, technology, sustainability and tree cover, and addressing northwest community concerns such as desire for more recreation facilities in this part of Cary.

The public involvement process included:

- Two Public meetings – January 2018 (attended by over 150 citizens) & November 2018
- On-line questionnaires in January/February 2018 (approximately 270 respondents at public meeting or on-line)
- Three meetings with Citizen Resource Team (CRT) made up of 16 area residents
- Focus group meetings with teens from Green Hope High School
- Presentation to Carolina Preserve Homeowners' Annual meeting – June 2018
- Review and comments from PRCR and Public Art Advisory Boards
- Email responses to material posted on the project webpage



- Town staff, representing various departments and perspectives, have provided input and feedback on concept plans.

### Public Input

In addition to the typical neighborhood park features, especially trails and children's play areas, there was strong public desire expressed for pickleball and tennis courts. Residents valued preservation of the existing mature stands of canopy trees and connectivity to surrounding neighborhoods. Walkability to the site was strongly encouraged and residents noted that providing greenway connections along Morris Branch as well as pedestrian access at the northwest corner of the park would encourage users to walk or bike to the park. Due to the proximity to the local high school, CRT members encouraged the design team to consider opportunities to engage teenagers by introducing site elements that are conducive to group gathering and socialization within a natural setting. The preservation of existing wooded areas was noted as an important component of the plan in order to provide a shaded park experience that engages with nature.

### Park Program and Unique Features:

The park's rolling topography, mature tree canopy, and existing creeks provide the opportunity to integrate park features within this natural setting. Due to these existing natural conditions, and their associated buffers and steep slopes, the McCrimmon Park has a nature theme. The park program is designed to serve all age groups – with a focus on facilities that have small-footprints and can be clustered on the flatter ridges

- The entrance and major park development will occur from Cary Glen Boulevard connecting the park to adjacent neighborhoods
- On-street parking as well as parking lot (+/- 60 spaces total)
- Lighted tennis courts (4-6) and pickleball courts (4-6)
- Teen focused activities at northwest corner including small-scale sport features such as sand volleyball courts or cricket batting cages
- Distinctive bridge / trail connection across the central valley to encourage travel between both sides of the park
- Playground with a nature theme and natural play elements
- Reservable shelter, restroom and other shade structures
- Community garden
- Paved loop trails. Connection to Morris Branch Greenway and Amberly.
- Public art includes hammock art designed for teens.

### Cost Estimate:

- Design: \$600,000 (Funded)
- Estimated Cost to Construct: \$8.1 Million

Construction is not currently funded.



## MASTER PLAN

### NEIGHBORHOOD PARK ON MCCRIMMON PARKWAY



SCALE: 1" = 60'-0"

0 30 60 120





## PARK MASTER PLAN

### Master Plan Description

The master plan for the Neighborhood Park on McCrimmon Parkway responds to the desires of the community to both preserve existing natural features on site and provide a variety of recreational facilities for the neighboring residents, with elements that appeal to all age groups. The park's rolling topography, mature tree canopy, and existing creeks provide the opportunity to integrate park features within this natural setting. The plan preserves the existing wooded stream valley through the park's center and the stream corridor along the south boundary, as well as groves of hardwoods at the northern corners of the site.

The vehicular entrance and main park facilities are off Cary Glen Boulevard, taking advantage of the main buildable area on site. Cary Glen Boulevard's lower traffic speeds and narrower roadway allow for easier access and connections to the adjacent multi-family neighborhood. The main programmatic elements are clustered in this portion of the park, creating vibrant activity centers and concentrating site development to preserve more of the woods. These elements include pickleball and tennis courts, a reservable picnic shelter, restroom, open play lawn, playground, and community garden, as well as an off-street parking area with approximately 46 spaces. Approximately 14 on-street parallel parking spaces are proposed to meet some of the park's parking needs in order to conserve buildable areas for recreation. The existing sidewalk along the active park frontage will be replaced by a streetside trail, creating a "park promenade" which will further connect the park to the adjacent street and community.

The open lawn acts as a central node for this area, along with the adjacent restroom and shelter, providing park users with a relaxing space for informal recreational use and occasional small community events. The play area will have a nature theme, integrating play structures with site topography and woodland vegetation and encouraging interaction with the natural environment. A less-structured nature play area extending into the woods from the more traditional play area will offer opportunities for discovery and exploration to stimulate a child's interest in nature. Pickle ball and tennis courts are arranged on terraces stepping down the ridge to fit with the topography, with shaded spectator seating areas on the slopes between them.

Across the central valley from the main activity area, the buildable northwest corner presents an opportunity to increase visibility of the park from two major roadways and to provide a welcoming pedestrian entrance and additional recreation facilities. This area is envisioned to have a teen focus, due in part to the proximity to Panther Creek High School. The design team and artist collaborated to provide a unique gathering space in this area featuring a playful hammock sculpture, integrated with the existing



topography and tree canopy, providing opportunities for group gathering as well as individual reflection. Small scale sport features such as cricket batting cages or volleyball courts will further enliven this area.

The park's trail system loops around the park, connecting the features, and reaches into the surrounding community via greenway and streetside trails. Proposed nature trails meander alongside the existing creeks to provide residents an opportunity to engage with their natural surroundings.

Park program elements include:

- Preserved Natural Areas and New Plantings

- Nature-themed Playground Area

- Teen Focus Area with Hammock Sculpture and small scale sport features such as Cricket Batting Cage and/or Sand Volleyball Courts

- Public Art

- Community Garden

- Open Lawn

- Tennis and Pickleball Courts with Shade Structure(s)

- WiFi & Charging Station(s)

- Picnic Shelter & Restroom

- Pedestrian Entrance & Gathering Space

- Cary Glen Boulevard Park Promenade

- Loop Trails and Greenway Connections

- Parking – including on-street and parking lot

- Stormwater Low Impact Development Strategies

- Sustainability

### Preserved Natural Areas & New Plantings

The preserved natural areas on site are central to the vision for this park. These areas are located along the creeks that pass through the park: Morris Branch Creek along the south boundary and a Morris Branch tributary crossing diagonally through the center of the site. The stream buffers ensure that the attractive hardwood forest vegetation and existing natural landscape will be protected. One of the goals of this concept plan is to preserve existing trees when possible. Protecting the existing natural landscape will create an environmentally responsible and visually appealing setting for the park.

New trees and vegetation will be planted in the areas cleared for construction of the park features to restore the woodland character of the site and provide shade and



greenery within and between the park activity areas. Plantings will also be added along the Green Level Church Rd frontage to extend the park landscape out to the street and integrate the existing street-side trail. Plant materials used should be primarily native and compatible with the existing woodland vegetation.

#### Nature-themed Playground area

The playground area provides a fun and active space for children of various age-groups and is subdivided into two categories: nature play and traditional play. It is located adjacent to the open lawn, the picnic shelter, and the restroom. It is also near parking area and is accessible from the off-site parking on Cary Glen Boulevard. To preserve the forest, the playground design will preserve existing canopy trees in and around the play area where possible, and plant additional trees for shade and to create the sense of a "playground among the trees" over time.

The design of the traditional play area is intended to celebrate the environment through nature themed play equipment and play activities and tie in to the existing topography and woodland vegetation.

The nature play area should offer a sense of discovery and exploration and should be an inclusive space with educational opportunities that stimulates a child's interest in nature.

#### Playground Area Recommendations:

- Provide multiple play areas with separate structures for age groups 2-5 and 5-12. Age specific play areas or "pods" can be separated with landscape areas, berms, or decorative fencing.
- Follow the principles of universal design in designing the playground to be fun and inclusive for people of differing abilities.
- Provide shade structures as needed to provide shade in the playground, especially the preschool area, before planted trees mature.
- Consider including a basketball goal or pole with multiple goals as one of the play activities in the playground area.

#### Northwest Pedestrian Entrance and Teen Focus Area

The pedestrian entrance at the intersection of McCrimmon Parkway and Green Level Church Road is intended to be a gathering space for the community. This corner of the park features open oak woodland and is very visible from adjacent roads and sidewalks though separated from the main park facilities by the central stream valley. An attractive pedestrian entry will draw attention to the park and welcome in visitors. This area will be a hub for socializing and exercise, with a focus on teens who are often seen walking along McCrimmon Parkway to and from Panther Creek High School. The loop trail will link this area to the rest of the park and a distinctive bridge and trail across



the valley would strengthen the connection, making the crossing feel shorter and inviting.

A sculptural element within this area, such as the proposed hammock sculpture element, and the small-scale sport facilities such as cricket batting cages and/or sand volleyball courts will enliven the corner, draw interest from passersby and provide opportunities for relaxation, informal gathering, and exercise. Other features might include small skate elements, an “Ninja Warrior”-type challenge course and dynamic seating components. A Wi-Fi and a charging station, possibly solar powered, would further enhance use of this area. An existing driveway ramp off Green Level Church Road provides vehicular access to this area for service and emergency vehicles.

### Public Art

The artist’s concept for the public art within the park is to build community through a shared imaginative space. The proposed hammock sculpture will provide a large group of friends and families with a place to relax, gather and interact. The concept is based on interviews and comments from local high school students who expressed a lack of connection to neighborhood parks. They wanted a place to congregate, hang out, and spend time with each other in a creative environment that is photo worthy. The hammock sculpture is intended to interact with the challenging topography and complement the dominant theme of nature on site. Additionally, this sculpture is an opportunity to highlight and establish the identity of this park.

### Community Garden

An approximately three-quarter acre community garden will be located adjacent to the open lawn and the on-site parking lot. The community garden is likely to include individual garden plots and will also foster community engagement, agricultural awareness and educational opportunities.

#### Community Garden Recommendations

- A lockable shed for tool storage and a small shade structure for small gatherings and instruction.
- A water source and hose connections.
- Fenced perimeter and gate with programable lock to keep out both deer and human trespassers.
- Educational signage or kiosk to promote natural learning.
- Plant material selections adjacent to the garden to provide food and/or habitat for native pollinators.

### Open Lawn

A small open lawn provides park users with a relaxing space for informal recreational use and occasional small community events. The lawn acts as a central node or



gathering point for several of the nearby park programs, such as the community garden, the court area, the playground area and the park promenade along Cary Glen Boulevard. The lawn area will be gently sloped and irregularly shaped to discourage use for organized sports so the area is available for informal play.

#### Open Lawn Recommendations

- An accessible perimeter sidewalk should be provided around the Multipurpose Lawn and accompanied with seat wall and/or bench areas.
- Provide a drought tolerant natural turf surface for sustainability and ease of maintenance.

#### Tennis and Pickleball Courts with Shade Structure

Four to six lighted tennis courts and four to six lighted pickle ball courts will be clustered along the ridge crest and stepped down the slope on terraces to minimize disturbance to the landscape and preserve key environmental features. These courts are intended for informal play and practice, without a reservation system for use, but can also be used for small tournaments and lessons on occasion. The court area includes a shade structure for resting or observing. Players and spectators will also be able to enjoy views into the adjacent central valley. Space between banks of courts will allow for grade changes and tree plantings for shade and visual separation. The court area is located adjacent to the parking lot, which increases its accessibility and is well connected to the rest of the park and neighboring communities via greenway and loop trails. Provision of shaded spectator areas at upper ends of banks of courts would offer opportunities for elevated viewing of games.

#### WiFi and Charging Stations

The plan calls for provision of car charging stations and ports for charging phones and laptops as part of the park infrastructure. WiFi is also recommended if feasible, particularly at the Teen Focus Area and in the central activity areas.

#### Picnic Shelter & Restroom

A picnic shelter and restroom are located at the center of the park to allow access from all points of the park. They are near the playground, courts, and community garden, and easily accessed from parking, especially the on-street spaces. They will be sited and designed to provide clear sightlines and visibility for security, with easily accessible approaches. The shelter offers views into the wooded central stream valley. The architectural design of these structures should complement the nature theme of the park. The restrooms will include unisex / family toilet facilities as one of the options.



### Cary Glen Boulevard Park Promenade

A meandering street-side trail is proposed on the eastern side of the site, replacing portions of the existing sidewalk along to Cary Glen Boulevard, to link park elements such as the play area, the open lawn and the community garden with both on-street and on-site parking. This wide tree-lined walkway or “park promenade”, with views and multiple connections into the park, will enhance the pedestrian friendly character of this neighborhood scale street, and invite residents of the adjacent multi-family housing units into the park.

### Loop Trails and Greenway Connections

The proposed park trails invite neighbors to enter and explore, offering numerous routes and providing points of interest along the way. The park trail system with an approximately three-quarter mile walking loop ties the various park elements together and winds through the forest canopy and rolling topography. Viewing areas and small rest-stops will be carefully placed along pathways to offer framed views into the creeks and forested areas for contemplation and respite. Meandering nature trails alongside the existing creeks more actively engage the user with the natural surroundings. Morris Branch Greenway and the Green Level Church Road Street-side trail are integrated into the park’s trail system, creating and extending connections to Cary’s greenway system. The plan calls for modifying the Town’s Master Greenway Plan to continue Morris Branch Greenway eastward along Morris Branch as far as I-540, with an on-grade crossing of Cary Glen Boulevard at the driveway entrance to the park.

### Parking

There are two parking areas designated for this park, one within the site and one along the street. The on-site parking lot, located within the park on the south east end, with the entrance aligned with Summerhouse Road, has space for about (46) vehicles. The off-site parallel parking is located along the eastern edge of Cary Glen Boulevard and has space for about (14) vehicles. It aligns with the existing parallel parking on the opposite side of Cary Glen Boulevard. At least one accessible parking space should be provided on-street with an accessible route to the picnic shelter and playground.

### Stormwater Low Impact Development Strategies

Stormwater control measures are located in low areas within the park, mostly along Morris Branch on the south side of the park. Stormwater control measures that follow a low impact development strategy and are small scale and attractive or unobtrusive in appearance, are encouraged. Designs should use measures such as rain gardens to minimize ponding depth and duration and provide separation from children’s play areas for safety. They should be designed as a system, if possible, so they can be monitored and maintained as one entity. These measures ensure that storm runoff on



site is collected, treated and released with reduced velocity, suspended solids and nutrients.

### Sustainability

Design for the park should incorporate sustainable development and operating practices including related to site and building design and construction, landscape practices, energy use, water and waste management. Attractive and accessible trail connections will encourage visitors to walk or bike to the park. Features to be considered include water conservation fixtures, drought tolerant vegetation, solar powered lighting and/or charging stations, pervious paving, and use of native vegetation. Well-built and durable structures and pavement maximize their lifespan and minimize waste. Good soil preparation and repair of compaction in landscape and lawn areas enables park vegetation to thrive and increases infiltration of rainfall, thus reducing stormwater runoff, irrigating the plants, and protecting water quality in the creeks.



## PROJECT PROCESS

### **Park Master Planning Phase: Site Inventory & Analysis and Data Review**

*October 2017 – January 2018*

### **Park Master Planning Phase: Conceptual Master Planning**

*January 2018-June 2019*

- Public Meeting #1 (January 30, 2018) – Introduction of Conceptual Master Plan & intake of feedback from Public
- Citizen's Resource Team Meeting #1 (March 20, 2018) – Introduction of revised Conceptual Master Plan & intake of feedback from team members.
- Citizen's Resource Team Meeting #2 (May 22, 2018) – Introduction of revised Conceptual Master Plan & intake of feedback from team members.
- Citizen's Resource Team Meeting #3 (November 1, 2018) - Introduction of revised Conceptual Master Plan & intake of feedback from team members.
- Public Meeting #2 (November 7, 2018)
- Presentations to Parks, Recreation & Cultural Resources Advisory Board (November 5, 2018 & March 4, 2019)
- Presentation to Public Art Advisory Board (December 19, 2018)
- Approved by Town Council (June 27, 2019)



## SITE INVENTORY

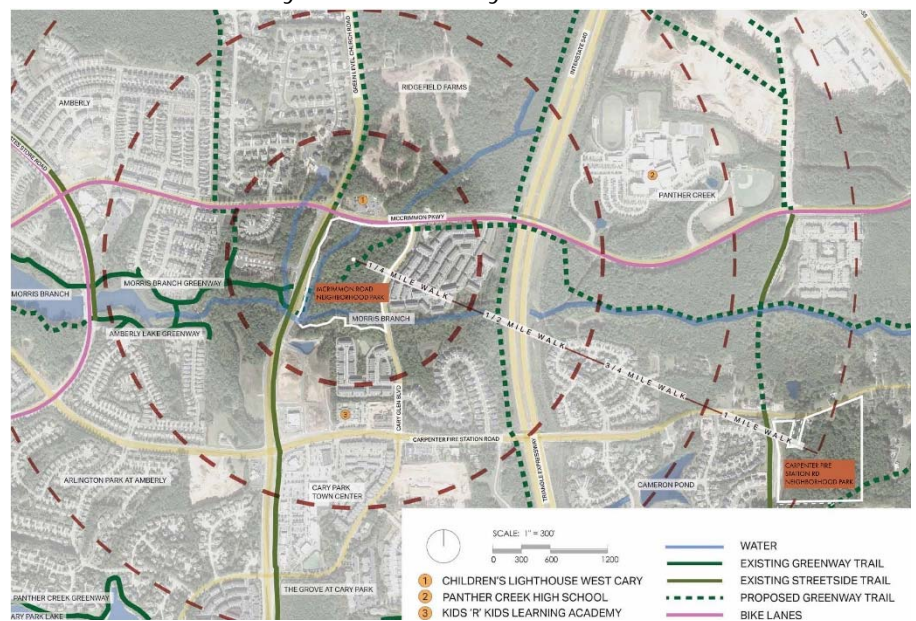
An in-depth study was performed to gather information about the site in order to inform the design decisions made in the master planning phase. Information that was examined includes the following:

- Regional Context
- Edge Conditions and Viewpoints into the Site
- Inventory of Topography and Slope Conditions
- Hydrology
- Existing Vegetation and Agricultural Influences on Site
- Historical Aerial Maps
- Stormwater Management
- Transportation
- Utilities
- Soils
- Threatened and Endangered Species/Biological Resources

### Regional Context

The park site on McCrimmon Parkway is surrounded by residential neighborhoods, including multifamily developments, "active adult" (+55) communities such as Carolina Preserve, and single family developments. Panther Creek High School is located three-quarter of a mile east along McCrimmon Parkway and two early childhood

development centers are located just north and south of the project. Nearby public parks and recreational facilities include Mills School Park and the proposed Carpenter Fire Station Road Park, located within 1.5 miles of this park. A series of greenway trails along Morris Branch are located just west of the site and feed into the American Tobacco Trail, two miles away. Along the existing Morris Branch Greenway are a series of outdoor fitness stations owned by an adjacent development that are located within a quarter mile of the proposed park.





### Edge Conditions and Viewpoints

The current site is heavily wooded throughout. It is bordered by Green Level Church Road on the western edge, McCrimmon Parkway on the north, Cary Glen Boulevard on the east, with Morris Branch forming the border on the south. Green Level Church Road is a high volume, four lane road. An existing streetside trail runs along the park side of the road. Both trail and road are elevated above the site offering high visibility into the future park. A pedestrian tunnel underneath Green Level Church Road connects the existing greenway trail to Morris Branch Greenway and Amberly Lake Greenway.

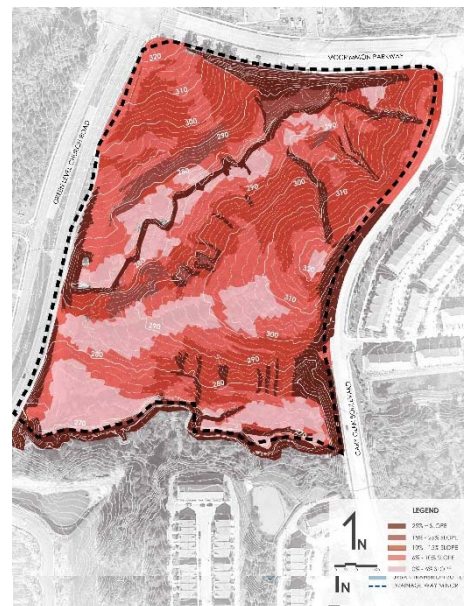
McCrimmon Parkway is a four lane road with a sidewalk and guardrail bordering the northern edge. This road is also elevated above the site which offers potential for high visibility into the future park. Currently the northern park frontage is heavily wooded with steep slopes into the park except at the two ends. Along Cary Glen Boulevard, the site currently rises steeply above the roadway before flattening and dropping towards the creek, forming a wooded ridge that offers minimal visibility into the site. Directly across the street is a series of multi-family housing units elevated above the road with potential for good visibility into the future park. There is strong potential here for connectivity and circulation into the park. Morris Branch forms a picturesque southern border with attractive woods and boulders, but steep slopes separate it from the main park ridge and adjacent multi-family development.





## Topography and Slope

There is approximately 50 feet of grade change on site with the highpoints occurring at the intersection of Green Level Church Road and McCrimmon Parkway and along the eastern border of the site. The lowest areas are along Morris Branch on the southern boundary and along the tributary that runs diagonally through the site. The floodplain of this tributary creek forms a flat valley with steeper slopes rising to the ridges on both sides with an average slopes of 10-15%. The steepest conditions occur along the banks of the creeks, which are deeply incised, especially the tributary, and also along the site edges where construction of the three roadways bordering the site has manipulated the topography.



## Hydrology

The water runoff on site flows into the two creeks mentioned above. These creeks are piped separately under Green Level Church Road, converging on the west side.



## Existing Vegetation

Vegetation on-site is mixture of hardwoods and evergreen trees with pockets of early-successional vegetation along the recently graded frontages of Green Level Church Road and McCrimmon Parkway. A stand of large canopy trees can be found in the northwest corner while a stand of Oak trees and a stand of Beech trees frame the eastern edges of the central creek. Pockets of young evergreen trees, mostly pines, occur on recently cleared slopes along McCrimmon Parkway and in the southern portion of the site, along the ridge and an old farm track. Two cleared sewer line easements cross the site, one running parallel to Green Level Church Road and diagonally across the northwest corner and the other along the southern border of the site, parallel to Morris Branch.



## Historical Aerial Maps

A look at aerial maps dating back to 1993 reveals that unlike much of the surrounding land, that was manipulated for agricultural use, the future park location has remained largely wooded, though a long driveway and one or two house sites indicate human habitation and land use. By 2005, the development and construction of McCrimmon Parkway and Cary Glen Boulevard, and the sewerline along the southern border were underway. In 2006 development of the adjacent multi-use housing has started. The 2014 shows the widened Green Level Church Road along with the new streetside trail and underpass. Lastly, the 2016 aerial shows the sewer line along Green Level Church Road and across to McCrimmon Parkway.



### Stormwater Management

Watershed Protection: The site is located within the Jordan Lake Watershed, which is a water supply watershed. As a result, designated streams are subject to buffers; a nitrogen and phosphorus control plan is required; and engineered storm water controls are required to contain the runoff from the first one (1) inch of rainfall for high-density developments. Sites may use a low-density option if impervious surfaces do not exceed twenty-four (24) percent of the project area, or thirty-six (36) percent impervious surface area for projects containing streets.

Buffers, Streams, and Wetlands: The site contains a stream, Morris Branch, that follows the southern property boundary. Another tributary stream traverses the site draining from the northeast corner to the southwest corner. The masterplan drawing shows the stream and buffer areas on the site; impacts to these features would potentially be subject to State, Local, and Army Corps of Engineers permitting.



The level of permitting will be dependent on the scale of the impacts. At a minimum documentation of impacts to the stream and buffers will be required, as will notification to the proper State, Local, and Federal agencies. If significant impacts occur, then additional permitting and mitigation payments could be required. Currently, the masterplan for the site includes limited impacts from the inclusion of a walking/pedestrian path and a bridge crossing of the tributary stream. The use of a bridge will limit the impacts and also the mitigation measures that will be necessary.

*Stormwater Treatment:* It is anticipated that the proposed park development will result in impervious area that is less than twenty-four (24) percent of the site area, making it a low-density development. As a result, engineered controls to contain the runoff from the first one (1) inch of rainfall will not be required. However, the site will still need a nitrogen and phosphorus control plan. The park site is located within the Upper New Hope part of the Cape Fear Basin, which means that the site nitrogen loading must be 2.2 lbs/ac/yr or less, and the phosphorus loading must be 0.82 lbs/ac/yr or less. It is anticipated that the nutrient loading will be below the upper thresholds so that the target loading rates can be met by buying down with nutrient credits, treatment with storm water control measures, or a combination of both.

*Stormwater Peak Runoff Control:* There shall be no net increase in peak storm water runoff leaving the park site from the pre-development conditions for the one (1)-year design storm. If the park has less than a ten (10) percent net increase in peak flow of the one (1)-year design, then there is not a requirement to control peak flow from the site. However, if the net increase in peak flow is greater than ten (10) percent, the entire net increase from pre-development one (1)-year design storm peak flow must be controlled. A downstream Impact Analysis for pre- and post-development peak discharge for two (2), five (5), and ten (10)-year peak discharges at each discharge point is also required. If the net increase in the peaks for the design storms are equal to ten (10) percent increase or less, then no further analysis is needed. It is anticipated that at a minimum some type of storm water control measure will be required to control the one (1)-year design storm for the site. The downstream impact analysis may result in additional storage requirements.

Stormwater control measures used to control peak runoff should be designed so that credit can be applied towards nitrogen and phosphorus reduction. This will help minimize the amount of nutrient buy down credits required to purchase.

*Proposed Stormwater Control Measures:* Currently, the masterplan includes storm water control and treatment features situated on the lower side of the main development area off of Cary Glen Boulevard. In order to receive credit for both treatment and attenuation, an infiltration type storm water control measure, such as bio-swales, bio-retention areas, and possibly infiltration basins will be investigated as potential solutions. If soils properties or other factors inhibit the use of infiltration type devices, it may be



necessary to utilize wet detention ponds or constructed wetlands as the storm water control measure.

### Transportation

McCrimmon Parkway is a 4-lane divided road along the northern boundary of the park site. It is a State road with a speed limit of 45 mph and is classified by the Town as a major thoroughfare. Green Level Church Road is a 4-lane divided road along the western boundary of the site. It is a State road with a speed limit of 45 mph and is classified by the Town as a major thoroughfare. Green Level Church Road is classified in the *Town of Cary Community Plan – Planned Transit Routes* as a future GoCary transit route (in the long-term plan). Because both McCrimmon and Green Level Church are State roads, they would be subject to encroachment permitting by the NC Department of Transportation (NCDOT). Cary Glen Boulevard is a 2-lane road with a center turn lane along the eastern boundary of the park site. It is a Town of Cary road that is classified by the Town as a collector avenue. According to the *Town of Cary Community Plan – Planned Roadway Widths* mapping there are no plans in the near future to widen the three roads beyond their current widths and lane configurations.

*Proposed Site Access and Parking:* The masterplan includes a main vehicular entrance on Cary Glen Boulevard that lines up with an existing entrance on the side opposite of the park. As part of the park development, an off-street parking lot is proposed as well as on street parking along Cary Glen Boulevard.

Secondary pedestrian entrances are planned along Green Level Church Road and at the intersection of McCrimmon Parkway and Green Level Church Road.

### Utilities

The following information was taken by reviewing GIS data and survey maps of the site conducted by others and provided by the Town. No field investigation has been performed to verify the location or size of the utilities described.

*Sanitary Sewer:* There is an existing 18-inch diameter sanitary sewer outfall which traverses the southern boundary of the site, flowing from west to east along the north side of the stream. It appears the bulk of the site could flow by gravity to this outfall. There is also an existing 8-inch diameter outfall which flows from northeast to southwest along the northwestern boundary of the stream described above. This northwestern corner of the site could be served by gravity flow to this outfall. It does not appear to be feasible to cross the drainage feature with gravity sewer without having a portion of that main exposed as an aerial crossing. The 8-inch outfall appears to connect to the 18-inch outfall described above in the southwest corner of the site although the survey map provided is unclear on this connection.



*Water:* There is an existing 8-inch diameter water line along the eastern right-of-way of Green Level Church Road from its intersection with McCrimmon Parkway which extends southwardly to the approximate mid-point of the property where it then turns west and crosses Green Level Church Road. Water service could be provided to the northwest portion of the site from this existing main. This water service could conceivably be extended to the eastern portions of the site across the drainage feature which divides the site. This would need further investigation to determine if this is the most economically feasible solution.

There is an existing 12-inch diameter water main along the eastern right-of-way of Cary Glen Boulevard which extends from the intersection with McCrimmon Parkway southwardly to and beyond the southern boundary of this site. Because this main is located along the eastern edge of Cary Glen Boulevard, a connection to this main would require either an open cut or a bore across Cary Glen Boulevard. There is one location shown on the GIS mapping where it appears there may be an 8-inch diameter line which has been installed as a stub-out across Cary Glen Boulevard. If so, this could provide water service to the eastern portion of the site.

There is also what appears to be an 8-inch water main along the northern right-of-way of McCrimmon Parkway. Connection to this main would require a bore across the parkway and is likely not an economically feasible option.

*Reclaimed Water:* GIS data indicates the location of a 20-inch diameter reclaimed water line along the southern edge of McCrimmon Parkway, from a location near its intersection with Cary Glen Boulevard, continuing west to the intersection with Green Level Church Road and then continuing south along the eastern boundary of Green Level Church Road as a 16-inch main for the entire length of this site. There is no indication of any reclaimed water along Cary Glen Boulevard.

If active, this reclaimed water main could provide water for irrigation or other non-potable uses on the site. The location of facilities which could use non-potable water will be a factor in determining the economic feasibility of such use.

*Anticipated Water/Sewer Needs:* The proposed masterplan includes a restroom facility located on the east side of Morris Branch that will require water and sewer service. In addition, water fountains located near the tennis and pickle ball courts and hose bibs near the shelters and in the community garden will require water service. Overall the current infrastructure located adjacent and within the site should be sufficient to serve this project water and sewer needs.

### Soils

The majority (approximately 73%) of the soil on this site consists of White Store sandy loam with slopes varying from 6% to as much as 20%. White Store sandy loam is primarily found on the hillslopes on ridges as the topography on this site would suggest. The soil



consists of a clay to a clay loam down to about 4 feet or more below the ground surface where weathered bedrock may be encountered. The soil is classified in Hydrologic Soil Group D which indicates fairly high stormwater runoff and limited ability for water to infiltrate.

The remainder of the soils (approximately 25% and generally following the drainage features on this site) consist of either Wehadkee and Bibb soils or Worsham sandy loam. Wehadkee and Bibb soils are located along the southern portion of the site, along the creek, and are generally identified as poorly drained soils with very high runoff characteristics. The depth to the water table can be from 0 to 12 inches below the ground surface. Both Wehadkee and Bibb soils can be considered hydric soils indicating the possible presence of wetlands.

The Worsham soils are found along the drainage feature which transects the site from the approximate northeast corner and then in a southwesterly direction to Green Level Church Road. Worsham soils are generally found in depressions and are poorly drained with medium runoff characteristics. These soils are in hydrologic soil group D and the depth to the water table can be found within 0 to 12 inches of the ground surface.

#### Threatened and Endangered Species/Biological Resources

Draper Aden Associates personnel reviewed the North Carolina Natural Heritage Program (NCNHP) and the U.S. Fish and Wildlife Service (USFWS) websites to determine those species that are currently listed as federally protected (threatened or endangered) in Wake County. The results of this search, including identified protected species and preferred habitat is presented in Table 1 and on USFWS species lists.



**Table 1**  
**Federally Protected Species Summary**

Species	Federal Status	Preferred Habitat Description	Habitat Observed
Bald Eagle <i>Haliaeetus leucocephalus</i>	BGPA	Large living trees within close proximity to a large body of water such as a large lake, river, or coastline which provide adequate feeding grounds	Project is 4 miles from Jordan Lake and is surrounded by residential and commercial use.
Red-cockaded Woodpecker <i>Picoides borealis</i>	E	Long-leaf pine ecosystems	None - No old growth long leaf pines present.
Dwarf Wedgemussel <i>Alasmodonta heterodon</i>	E	Neuse & Tar River Basins	None - Project site drains to Cape Fear River Basin.
Michaux's Sumac <i>Rhus michauxii</i>	E	Sandy or rocky open woods, rights-of-way, roadsides, edges of clearings	No power line crossings on property. Roadside areas have been previously disturbed by sidewalks and bike trails.

NCNHP maintains a database of elements of occurrence for protected species in the state of North Carolina. A site-specific review of the project did not reveal any federally protected species (occurrences) within the project area.

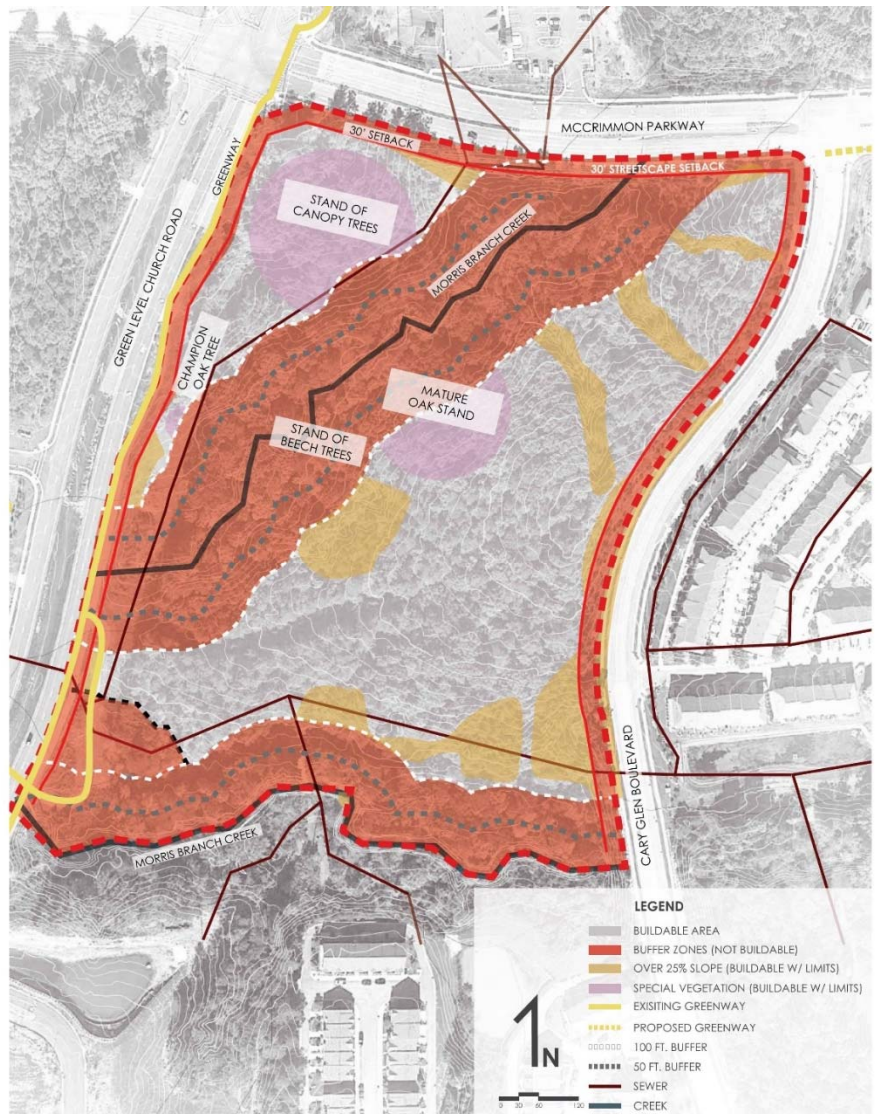
A preliminary review of the site through current available aerial photography (5/1/2017) suggests that the project site currently is a mix of hardwoods and pine. A review of the USFWS Information for Planning and Conservation (IPaC) tool indicated that no critical habitat, wildlife refuges, or fish hatcheries are located within the project area. Due to a lack of habitat in the project area, it is not anticipated that the project would have an effect on protected species. However, it is recommended that the Town undergo a formal consultation with USFWS during the final design phase.



## SITE ANALYSIS

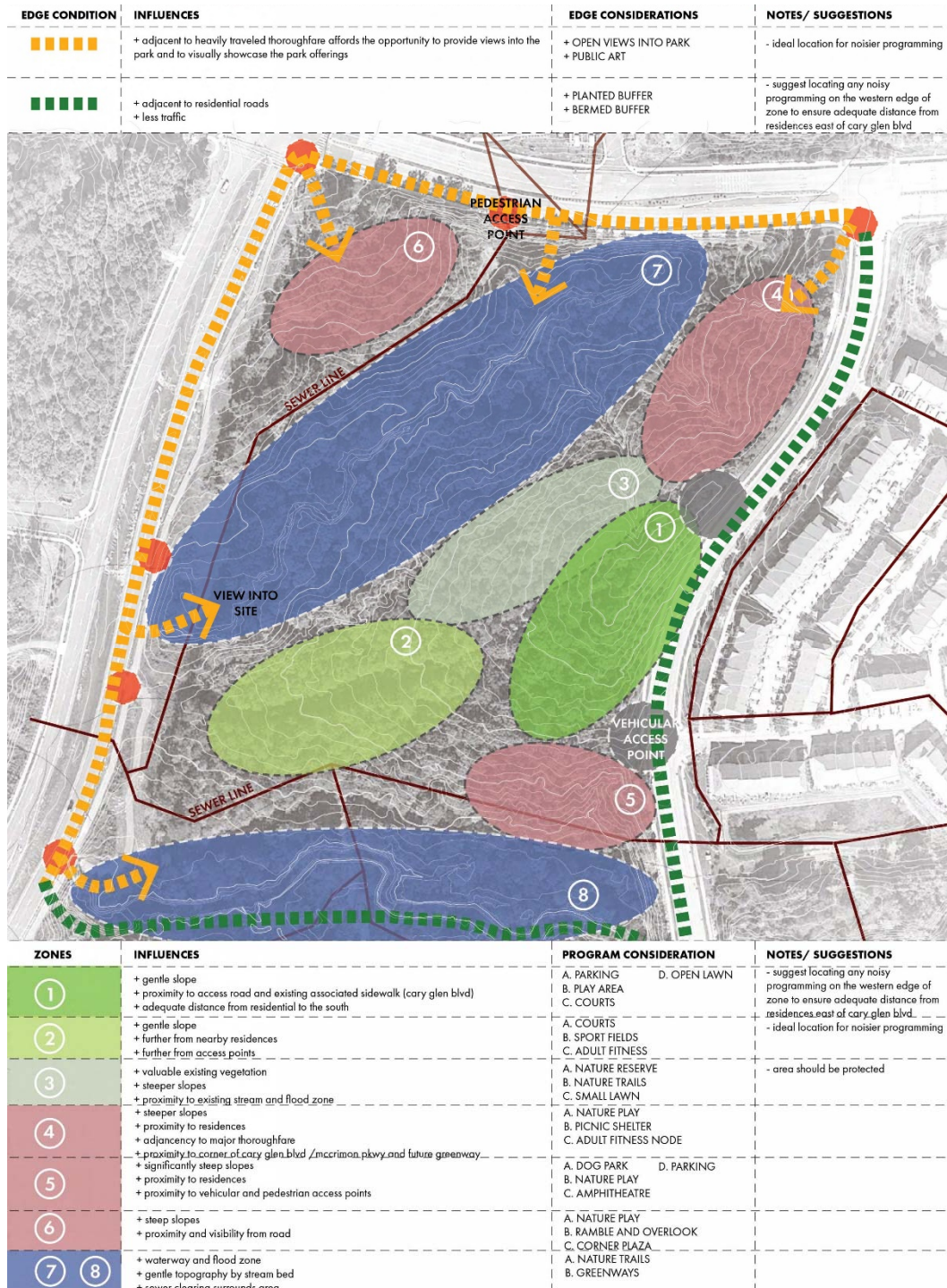
After collecting site inventory and compiling the necessary information, the design team began to synthesize the data to produce a design for a neighborhood park that fits the constraints of the site, honors the important existing natural features, and meet the needs of the Town of Cary and surrounding residents.

The team put together a **Development Suitability Map** that helped to determine the spaces that were more suitable for programmatic elements based on topography, streams, required buffers and existing vegetation. The existing streams, which are protected by a 100 foot buffer, and the distinguishable stands of hardwoods were deemed unbuildable zones or buildable but with limitations. This helped the design team to determine where the more buildable areas are that can afford more intensive programmatic elements.





The team then compiled information from the Development Suitability Map plus other factors from the inventory to create an overall **Site Opportunities and Constraints Map**.



Along with buildable areas, the design team looked at views and access points into the park with respect to connectivity and varying modes of transportation. The map above indicates suitable access points into the site via car and walking/bicycle. Green Level Church Road and McCrimmon Parkway, heavily travelled thoroughfares, offer the opportunity to provide views into the park and visually showcase the park design. These



views are most notable at the corner of McCrimmon and Green Level Church Road and along the western edge. Views from Cary Glen Boulevard are currently mostly blocked by topography, but there is potential for close connections and views from the adjacent multifamily residences across the road.

Vehicular access points were determined by multiple factors, the first being the functional requirements to connect to existing and proposed roads and greenways that serve the site. Locations of driveways, for instance, need to meet Town and NCDOT standards for sight distances and distances from intersections. Other factors include the nature of the edge conditions such as topography and views, and routes park users are likely to want to take. The adjacent thoroughfares, Green Level Church Road and McCrimmon Parkway, with divided medians and high volumes of fast-moving traffic each day, pose challenges for vehicular access. Cary Glen Boulevard has less traffic at slower speeds, but the curves and sight distances, along with required separation from existing intersections, limit the access point to the one shown on this map. Pedestrian access options are more numerous due to the sidewalks and trails along three sides of the park. The trail along the west edge presents multiple access opportunities at locations where topography and views are suitable. The Morris Branch pedestrian tunnel provides grade separated access from neighborhoods west of Green Level Church Road. There is also opportunity to cross on-grade at the signalized intersection with McCrimmon Parkway. The Cary Glen Boulevard sidewalk affords multiple points of pedestrian access allowing convenient connectivity from the adjacent homes.

This map helped the design team to identify suitable program elements that could be included in the concept design. These programmatic elements were then later refined in the design process based on feedback from the Town of Cary and members of the surrounding neighborhoods.



## INITIAL PARK CONCEPTS

The Concept Diagram that led to the Master Plan was developed over the course of one Public Meeting (PM #1) and two Citizen Resource Team meetings (CRT #1, #2). The development of the Concept diagram began with a review of the existing conditions, site inventory, and site analysis, followed by CRT and public input, and reviews by Cary staff from throughout the organization. The design team initially developed two concept diagram options and presented these at Public Meeting #1. The diagrams are illustrated below.

**Concept A** provides a centralized open lawn area with areas designated for courts and adult fitness to the south and west of the site. A centralized parking area is provided between the open lawn area and Cary Glen Boulevard. Play and natural areas are located north of the central lawn. A main pathway connection joins the play area to the natural play area at the northwest corner of the site. A pedestrian bridge will be required to cross the creek and connect the 2 sides of the park. A dog park is shown on the south end of the site.

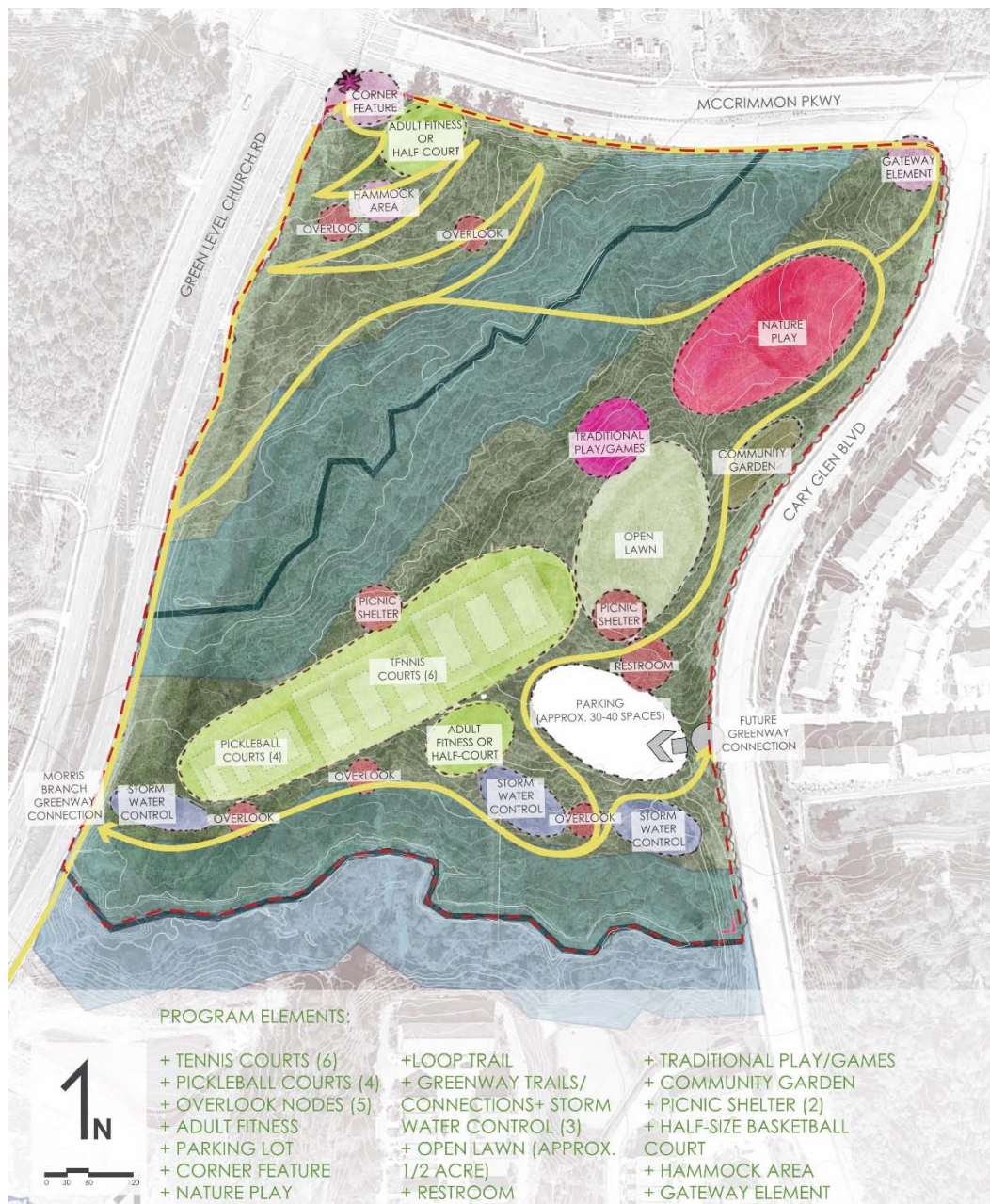


**Concept B** provides a central area for courts north of the park's vehicular access point and designated parking area. A large open lawn and play area is located adjacent to the stream buffer with additional smaller open lawn areas to the north and south. A dog park is shown on the south end of the site. A pedestrian pathway and bridge connect a series of overlooks and an open air pavilion on the northwest corner of the site.





Following Public Meeting #1, the design team provided an assessment of the community input as well as a revised concept diagram that combined the preferred elements and desired arrangement into a single comprehensive diagram. During CRT #1, the design team presented the preferred combined concept diagram as well as a list of preferred program elements. During the meeting, CRT and project team members organized into small groups to further refine each concept diagram. The refined concept plans and comments on the preferred program list were presented by the CRT groups at the end of the meeting. The **Combined Concept Plan** and **Program Elements List** are illustrated below:



The revised concept diagram provides a central lawn area and locates 6 tennis courts,





4 pickleball courts, and adult fitness areas to the south and west of the open lawn. A parking lot is provided adjacent to the park's vehicular access point off Cary Glen Boulevard. A playground and natural play area integrated with preserved trees is located north of the open lawn. A community garden is also illustrated east of the open lawn adjacent to Cary Glen Boulevard. A pedestrian pathway and bridge connect the northwest corner of the park property to the main park area east of the creek. The diagram proposes an option for either an adult fitness area or half basketball court along with a hammock area and seating areas overlooking the stream.

## PRELIMINARY MASTER PLAN



Following CRT #2, Cary's project team reviewed the concept diagrams with various internal stakeholder groups and developed a list of comments and further refinements



for the design team to incorporate into a preliminary park master plan. This plan was reviewed by the Citizens Review Team at CRT #3 on November 1, 2018 and presented at a Public Open House on November 7. It was also presented to the Parks, Recreation & Cultural Resources Advisory Board (PRCRAB) on November 5. The plan was generally well received but concerns were raised by public and staff about the isolated nature of the northwest corner, both for security and accessibility, and the best features to provide there to make use of this space and create enough attraction to make it feel safe. There was also a request for an in-line hockey court.

## DRAFT MASTER PLANS

**DRAFT MASTER PLAN**  
NEIGHBORHOOD PARK ON MCCRIMMON PARKWAY



The Draft Master Plan presented to PRCRAB on March 4, 2019 included the following changes to the northwest corner of the site based on comments made at the three



meetings in November and by Town staff:

- the basketball court was replaced by 4 sand volleyball courts
- In addition, the plan suggests consideration of a small-scale teen play elements such as challenge course and/or skate elements.

These changes were based on recommendations from PRCRAB members and staff who noted that there are several basketball courts in the vicinity of the park, including existing at Carpenter Park and Mills Park, and proposed at Carpenter Fire Station Road Park.

The Master Plan at the beginning of this report includes a further revision to the northwest corner, made after the PRCRAB meeting, changing the designation of the courts to Multi Sport Courts. This change was made to provide more flexibility in this area as the park design is developed based on staff assessment of program needs as well as site constraints. The plan suggests teen-focused small-footprint sport elements be considered in this area such as cricket batting cage(s) and/or volleyball courts, challenge course, or similar.



### OPINION OF PROBABLE CONSTRUCTION COSTS

Preliminary probable construction costs for building McCrimmon Parkway Park as illustrated by the Master Plan are identified by the following estimate. For the purpose of this plan, this opinion of probable construction cost has been created utilizing recent park construction data for this Triangle region. It should be noted that all unit costs shown includes labor, materials, overhead and profit.

<b>Buildings</b>	
Restroom Building	\$250,000
Shelters & Shade Structures	\$200,000
<b>Earthwork &amp; retaining walls</b>	\$1,045,000
<b>Site Utilities</b>	\$336,000
<b>Site Development</b>	
a. Parking	\$140,000
b. Trails & Pedestrian Zones	\$375,000
c. Playground	\$354,000
d. Tennis Courts (unlit)	\$360,000
e. Pickleball Courts (unlit)	\$210,000
f. Multi-Sport Courts (unlit)	\$160,000
g. Court Lighting	\$410,000
h. Bridge	\$200,000
i. Teen Focus Area elements	\$220,000
j. Community Garden	\$100,000
k. Public Art	\$120,000
l. Landscape Areas	\$360,000
m. Site Furnishings & Signage	\$133,000
n. WiFi / Fiber extension to site	\$157,000
<i>Building and Site Subtotal</i>	\$5,130,000
<b>12% General Conditions</b>	\$615,600
<b>Total Construction Estimate (12/2018)</b>	<b>\$5,745,600</b>
<b>18% Inflation (over 3 years)</b>	\$1,034,200
<b>8% CA &amp; Testing Allowance</b>	\$460,000
<b>15% Contingency</b>	\$862,000
<b>Project Total</b>	<b>\$8,101,800</b>



## **APPENDIX**

- Site Inventory and Analysis Maps – McCrimmon site
- Meeting & Public Comments (McCrimmon & Carpenter Fire Station Rd Parks)